

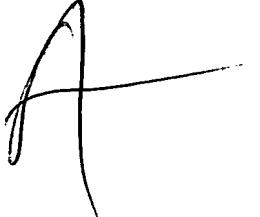
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REMARKS

These amendments and remarks respond to the April 1, 1999, Office Action. In that Office Action, the Examiner rejected all pending claims, claims 1-21. In responding to the Office Action, the Examiner's arguments will be answered in the order presented.

Double Patenting

A terminal disclaimer is attached for Claims 1-4, 6-8, and 11-14 to overcome the nonstatutory double patenting rejection. However, no terminal disclaimer is included for claims 5, and 18-19 because those claims include elements and limitations that were neither disclosed in U.S. Patent 5,470,670 nor obviated by that patent. Specifically, claims 5 and 18-19 include the limitation that said inner liner and said outer shell are sized to maintain exhaust gas exiting said inner liner at a velocity of approximately 1.5 feet per second relative to water exiting said outer shell. This limitation was new matter added in this continuation-in-part. Furthermore, these limitation were not obviated by the earlier patent because they produce the unexpected results that are detailed in this application's originally-filed specification, pages 12-13, lines 25-3.

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Claim Rejections--35 U.S.C. §102

All pending claims as now amended through each of the independent base claims, claims 1, 11, and 18, are not anticipated by Lulloff et al. because that reference does not include all of the claimed elements. The Examiner rejected claims 1-4, 6, and 8-21 as being anticipated by Lulloff. Each independent base claim has been amended to limit the device to those having a spacer that is narrow enough to create back pressure in the inner volume. This limitation is not disclosed by Lulloff. In the office action, the Examiner compared Lulloff's dam 66 to the spacer and the passage 68 to the passageway. However, in Lulloff, the dam works to retain water until the inner volume becomes filled to the level of the passage at which time the water overflows without building any pressure. In addition, as seen in Lulloff's figure 7, passage 68 is too large restrict the passage of water and therefore dam 66 cannot create a pressure inside an inner volume. In contrast, in the invention at hand, water accumulates behind the spacer and the passageways are sized to creates a pressure inside the inner volume; this causes the water to be squirted through the passageway under pressure. As detailed in the specification, by squirting the coolant-water more heat can be quickly transferred from the exhaust.

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Claim Rejections--35 U.S.C. §103

Claim 5 has been amended through its base claim, claim 1, and, as amended, is not obviated by Lulloff et al. in view of design choice. For the reasons stated above, claim 1 is neither anticipated or obviated by Lulloff. For the same reasons, claim 5 that depends on claim 1 is not obviated. In addition, the Examiner is generally directed to the section of the preferred embodiment labelled, "Second Alternative Embodiment" and more specifically to pages 12, line 25 to page 13, line 3, for details of the advantages of producing an exhaust gas with a relative velocity of 1.5 feet per second relative to the velocity of the water.

Claim 7 by depending on amended claim 1 includes limitations that are not obviated by the combination of Lulloff and Shioa et al. The Examiner rejected claim 7 as being obvious over Lulloff in view of Shioa. As argued previously, claim 1, as amended, includes limitations not included or obviated by Lulloff. The addition of Shioa and its corrosion-resistant parts do not include the features being described in the amendment to claim 1.

Claims 1-4, 6, and 8-21 as effected by the amendments to their respective independent base claims, claims 1, 11, and 18, are not obviated by Schlussler in view of Lulloff. The Examiner rejected these claims 1-4, 6, and 8-21 because, "It would have been obvious ... to have utilized the spacer taught by Lulloff in the Schlussler exhaust, since the use of the spacer would have provided a rigid

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connection between the concentric pipes." However, the structure as now described in the amended claims describes more than a mere connection between the pipes through which water can flow. The amended claims require that the passageway within the spacer be small enough to create a pressure within the inner volume which causes the water to be ejected out of the inner volume. As described earlier in this response and the specification, by ejecting water under pressure the water is better distributed to transfer more heat quickly.

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Respectfully submitted,



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